

AMENDMENTS TO THE SPECIFICATION

Please amend the following paragraphs following in the Specification with following paragraphs:

-Please amend the paragraph starting on page 2, line 23, as follows:

--A telephony hybrid circuit is shown in FIG. 2, comprising a microphone 1, 2 at each end of the differential channel 30, 31, and a loudspeaker 5~~3~~ and 6. The microphone and loudspeaker are coupled into the channel by a transformer 7 and 8, and resistors such as 3 and 4. The loudspeaker responds only to currents injected into the channel, the microphone picking up a portion of this signal. The level of cancellation of this circuit is inadequate for the applications under consideration in this invention, and moreover at very high speeds, transformers operate across a narrow frequency band, which makes them unsuitable for sending data unless encoded, this coding reduces significantly the data payload of the channel. Improved passive versions of this hybrid circuit exist, but still provide around -18 dB of coupling between the channel directions which is insufficient rejection for the present application.--

-Please amend the paragraph starting on page 3, 24 as follows:

--The design of a differential signalling system where both data for both directions is communicated on the same wires through time division multiplexing of the drivers is also well known, such as using tristate LVDS drivers and in RS485. Such an RS485 system provided by Maxim Integrated Products, Inc. (CA) is shown in FIG. 3, where two chips communicate across a differential channel 30, 31, each with their own electro-static discharge circuits (18, 19 and 28, 29). The transmit buffers 11, 12 (and ~~20, 21, 21, 22~~) may be implemented using parts such as a Maxim integrated circuit part number Maxim 3460 and Maxim 3461.--

-Please amend the paragraph starting on page 18, line 19 as follows:

--The offsets in the sources of the differential pairs, 165 and 166 may be introduced by deliberately mismatching the input transistors. However, in this embodiment an offset is

generated with the introduction of a resistor in the source of one half of each differential pair and a current source feeding into the node at the junction of the source and resistor. ~~This is depicted in FIG. 8d.~~ The current source in this embodiment, 161, is made to vary with the sheet resistance of the resistors used in the sources, 167, in order that the offset remain fixed over process and temperature. In another embodiment it is possible to introduce an offset which varies as a function of process parameters.--

-Please amend the paragraph starting on page 18, line 28 as follows:

~~--FIG. 8c shows the~~ The multiplexing of the outputs of the amplitude cancellation and phase cancellation sensor buffers, 90 and 190, as shown in FIG. 8a and FIG. 8b, respectively, are multiplexed. A control signal from the FSM, 42, is connected to the enable of buffer 90 and to an inverter 210. The output of inverter 210 is connected to the enable of buffer 190. As buffers 90 and 190 are transconductance stages the output current can be enabled or disabled by the logic state of the control signal from the FSM. A logic high on the control signal integrator_select will enable the output current from buffer 90 while a logic low will enable the output current from buffer 190. Transistors 200 and 201 form a cascade stage which maintains a low impedance on the multiplexed outputs enabling the whole circuit to be placed close to the edge of the integrated circuit.--